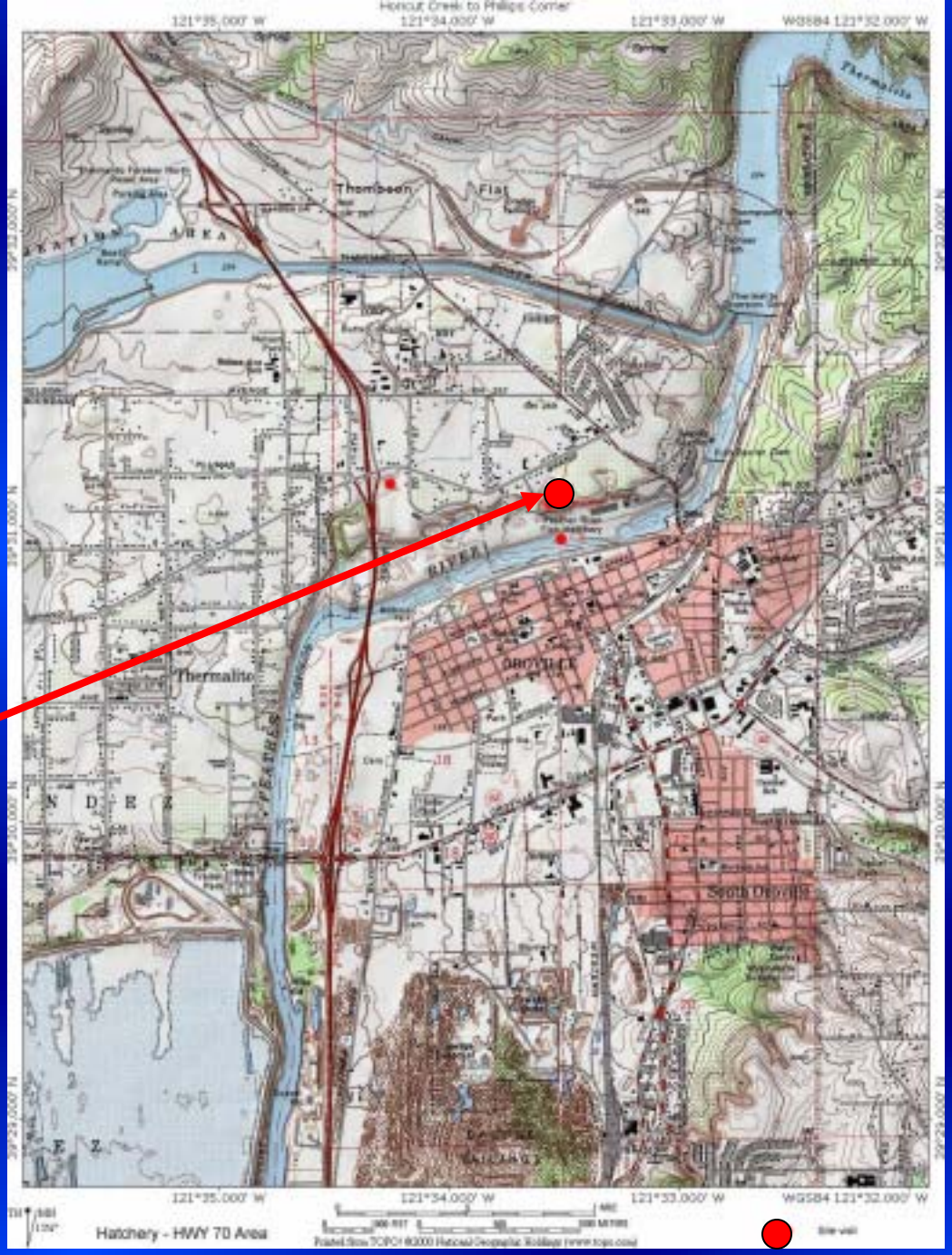
Resource Action - EWG-98

Proposed Creation or Enhancement of Salmonid Spawning and Rearing Habitat in the Tributaries of the Lower Feather River (High Flow Channel)

Rear Hatchery Channel

Rear Hatchery Channel



Rear Hatchery Channel Location

Feather River Hatchery

Rear Hatchery Channel

Positives

- **Habitat/Cover**
- **Gradient**
- **Water Source**
- **Available Land**
- **<0.25 Mile from Feather River**

Rear Hatchery Channel (Cont’)

Rear Hatchery Ditch (Cont')

Rear Hatchery Ditch (Cont’)

Rear Hatchery Channel - Potential Habitat for Salmonid Spawning & Rearing

- Site has good potential for development for spawning and rearing habitat

- Design Considerations
  - Providing a Variable Flow Regime
  - Connecting to the Feather River (Channel Construction)
  - Restoring Instream Habitat

Questions

?

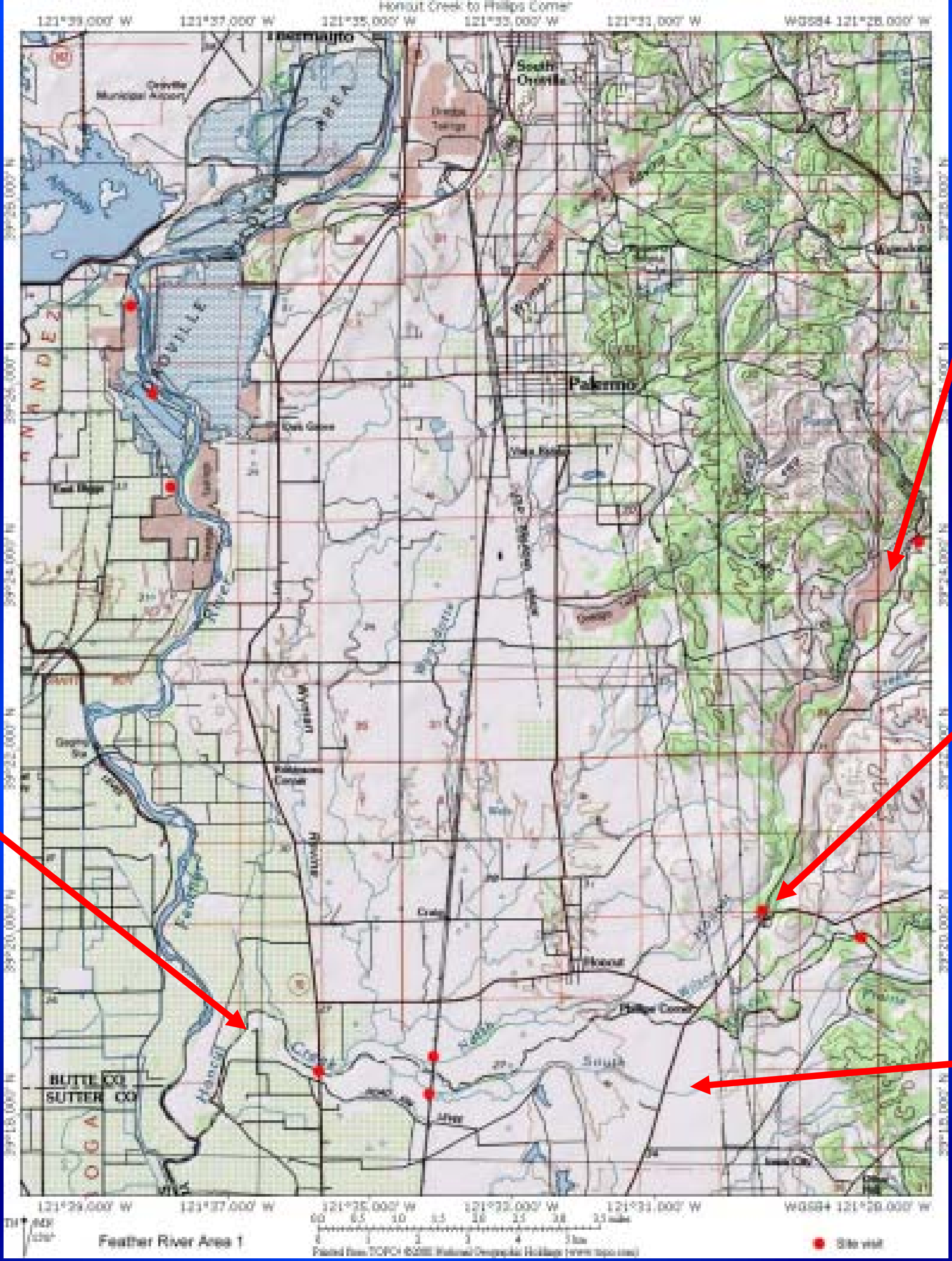
Resource Action EWG-98

Creation or Enhancement of Salmonid Spawning and Rearing Habitat in the Tributaries of the Lower Feather River

Honcut Creek Area

Sites Visited:

Natchez Creek, Wilson Creek, North Honcut Creek, and South Honcut Creek

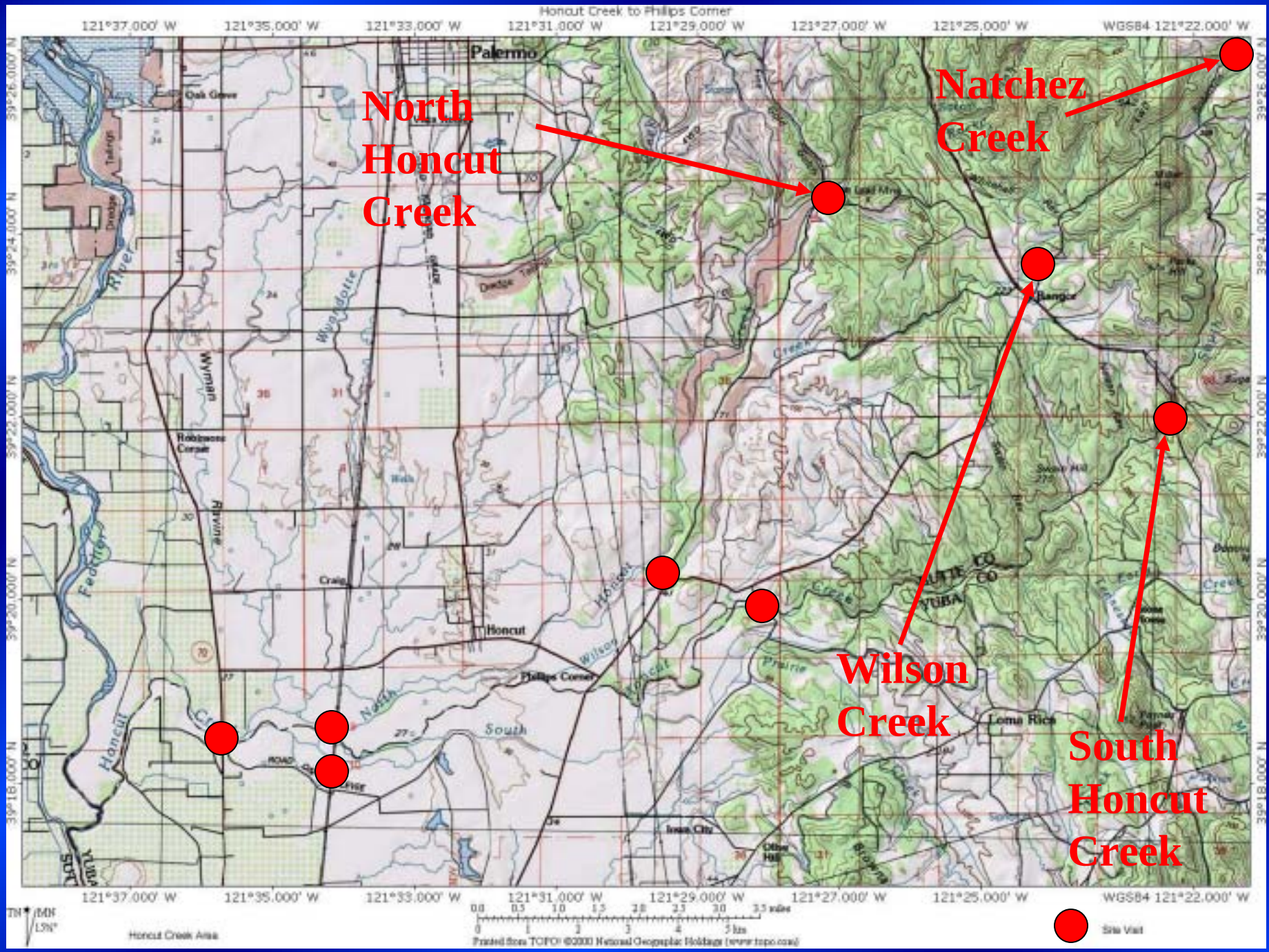


North Honcut Creek

Wilson Creek

Honcut Creek

South Honcut Creek

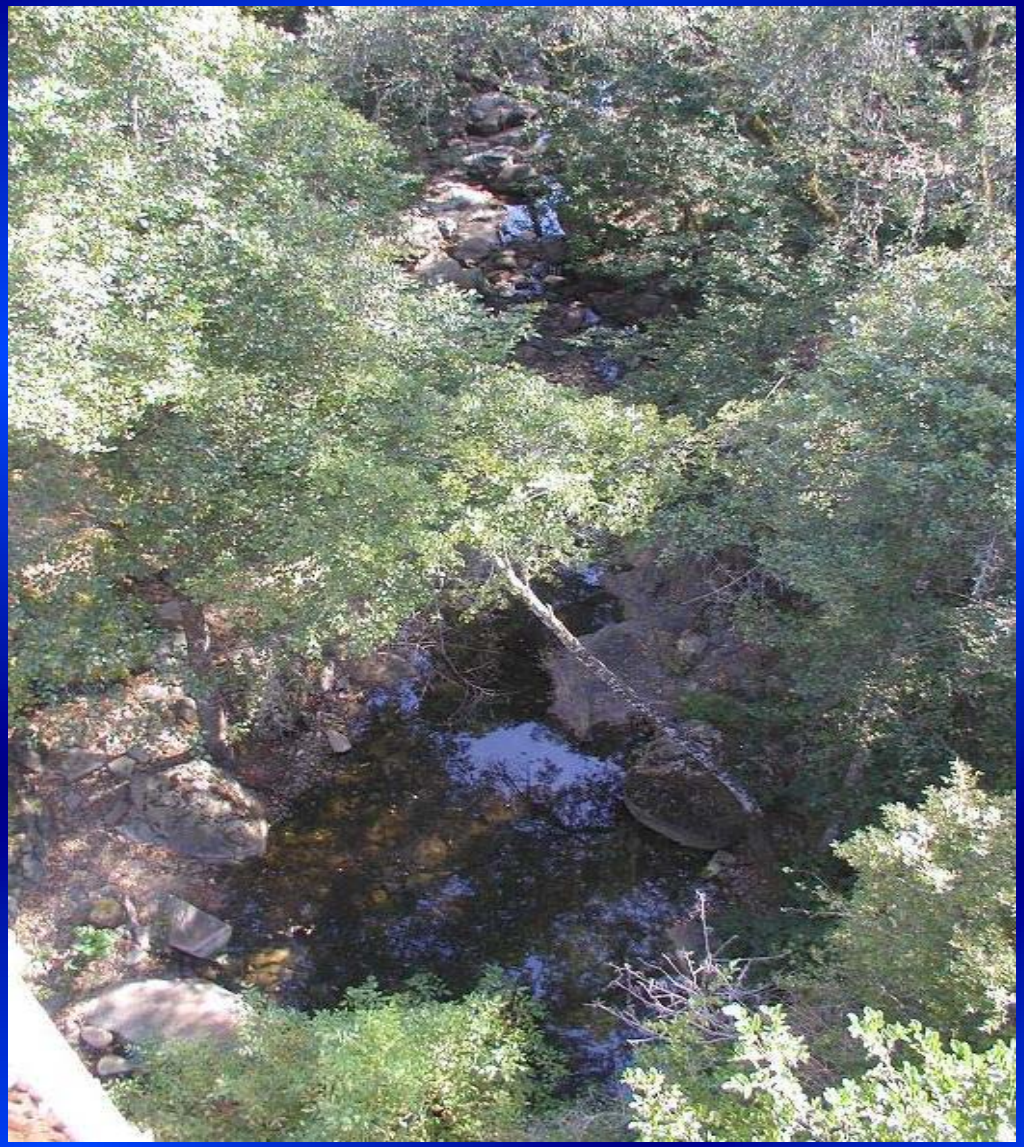

Honcut Creek to Phillips Corner
North Honcut Creek
Natchez Creek
Wilson Creek
South Honcut Creek
Palermo
Honcut
Phillips Corner
Loma Rica
Oak Grove
Wyandotte
Wyman
Robinsons Corner
Craig
Irish City
Honcut Creek Area
Site Visit

Site Evaluation Criteria

Stream Temperature, Stream Flow, Channel Substrate, Riparian Vegetation, Habitat Type, Stream Gradient, Water Quality

Natchez Creek

- Near Town of Rackerby
- 20 Miles East of Feather River
- Tributary To South Honcut Creek
- Elevation 1,300 feet
- Bedrock Stream
- Dense Cover



Site 1. Wilson Creek

- Near Town of Bangor
- 15 Miles East of Feather River
- Elevation 800 feet
- Dry Stream
- Dense Cover
- Decent Gradient

Wilson Creek

- Elevation 160 feet
- Agricultural Run-off
- Open Channel
- Centrarchids Observed

South Honcut Creek

- East of Rackerby
- Elevation 1,300 feet
- 20 Miles NE of Feather River
- Sand & Gravel Substrate
- Moderate Cover
- Low Flow (<1 cfs)
- Temp: 58º @11AM

South Honcut Creek

- SE of Bangor, near Sugarloaf
- Elevation 600 feet
- Bedrock & Gravel Substrate
- Moderate Cover
- Flow: 1-2 cfs
- Temp: 64º @10AM

South Honcut Creek

- East of Honcut
- Elevation 170 feet
- Sand & Gravel Substrate
- Moderate Cover
- Flow: 5-8 cfs
- Temp: 72º @2PM

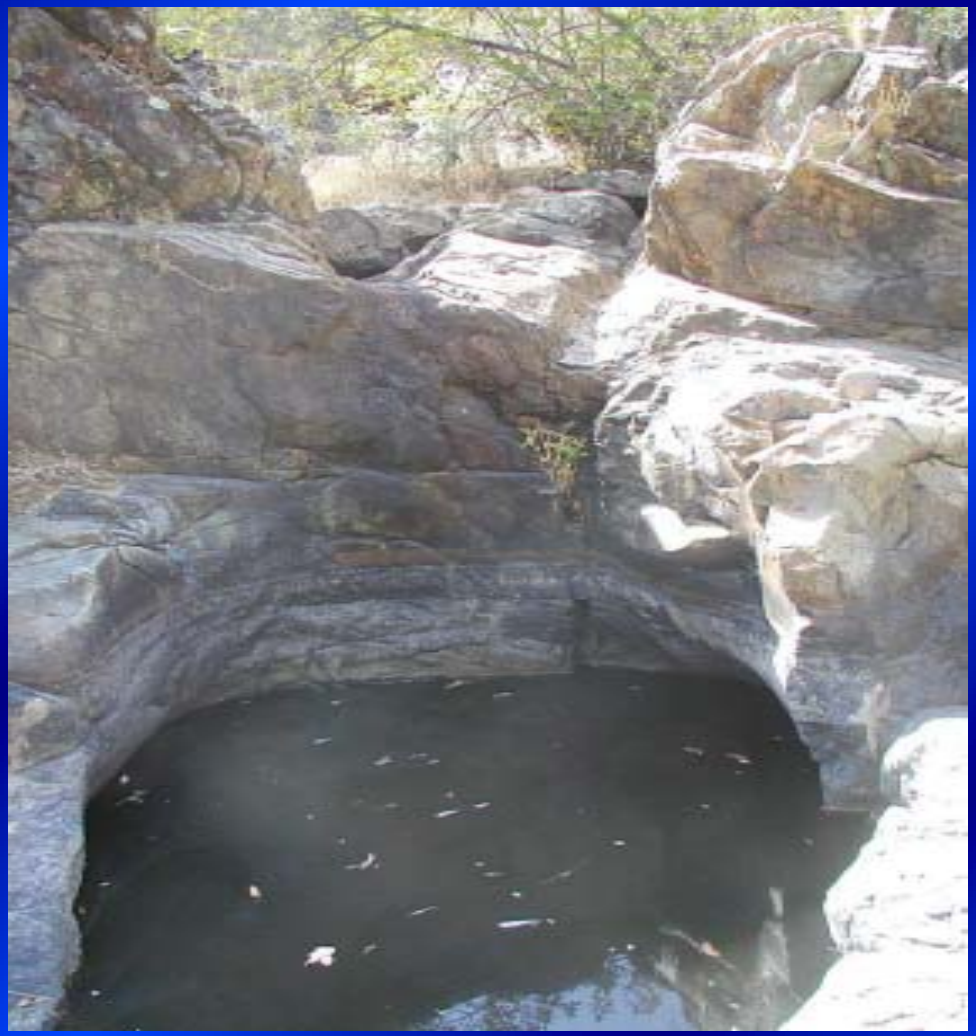
South Honcut Creek (Looking Downstream)

- RR Tracks East of CA-70
- Elevation 100 feet
- Sand & Gravel Substrate
- Moderate Cover
- Flow (5-8 cfs)
- Temp: 70º 3PM

South Honcut Creek (Upstream)

North Honcut Creek

- Near Cleveland Hill
- Elevation 680 feet
- 15 Miles NE of Feather River
- Bedrock Pools w/ Gravelly Substrate
- Moderate Cover
- Low Flow (<0.5 cfs)
- Temp: 64º @12AM

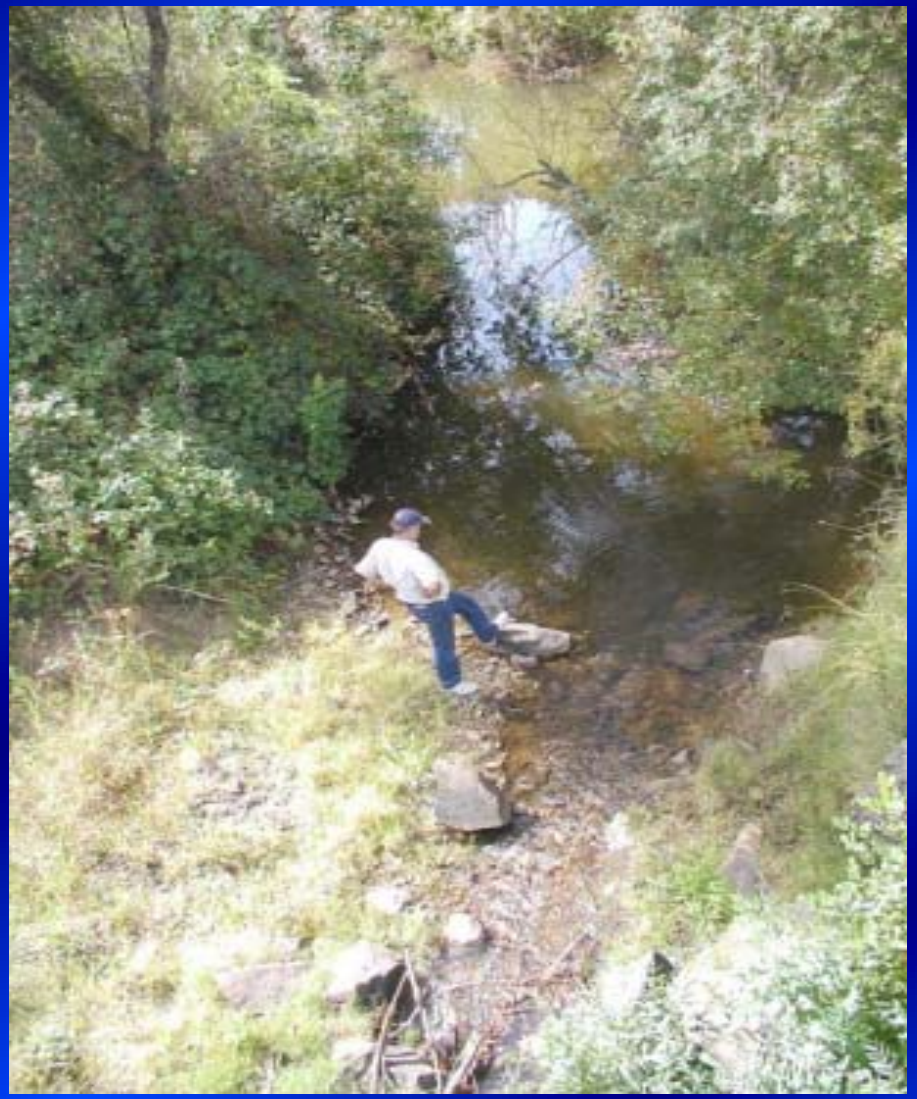


North Honcut Creek

- Near Fine Gold Gulch
- Elevation 290 feet
- Gravelly Substrate
- Moderate Cover
- Low Flow (3-5 cfs)
- Temp: 68º @12:30PM

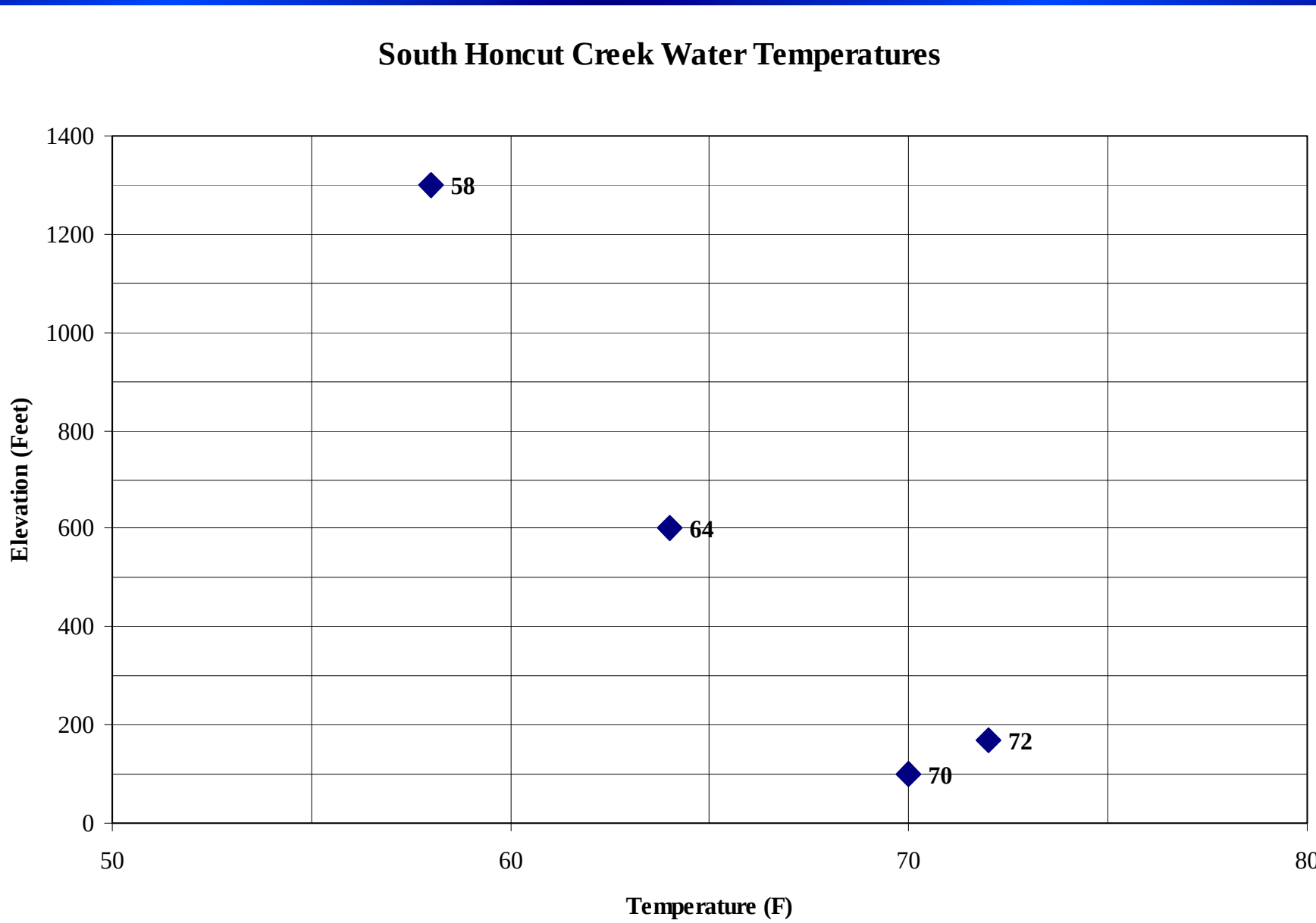
North Honcut Creek

- RR Tracks East of CA-70
- Elevation 100 feet
- Sand & Silt Substrate
- Moderate Cover
- Low Flow (<1 cfs)
- Temp: 68º 2PM



Summary of Findings

- **Stream Conditions Vary With Watershed Location**
- **Appear Favorable in the Upper Watershed**
- **Degraded in Downstream Reaches**
  - Temperature, Sediment Deposition, Predatory Fish, Variable Riparian Cover


South Honcut Creek Water Temperatures
1400
1200
1000
800
600
400
200
0
Elevation (Feet)
58
64
72
70
50
60
70
80
Temperature (F)

Additional Concerns

- Fish Passage

South Honcut Creek

- East of Honcut
- Elevation 170 feet

- Presence of Diversion Dams in Unknown (e.g. Duck Clubs)

North Honcut Creek

- Near Cleveland Hill
- Elevation 680 feet
- Presence of Potential Natural Barriers is Unknown

Additional Concerns

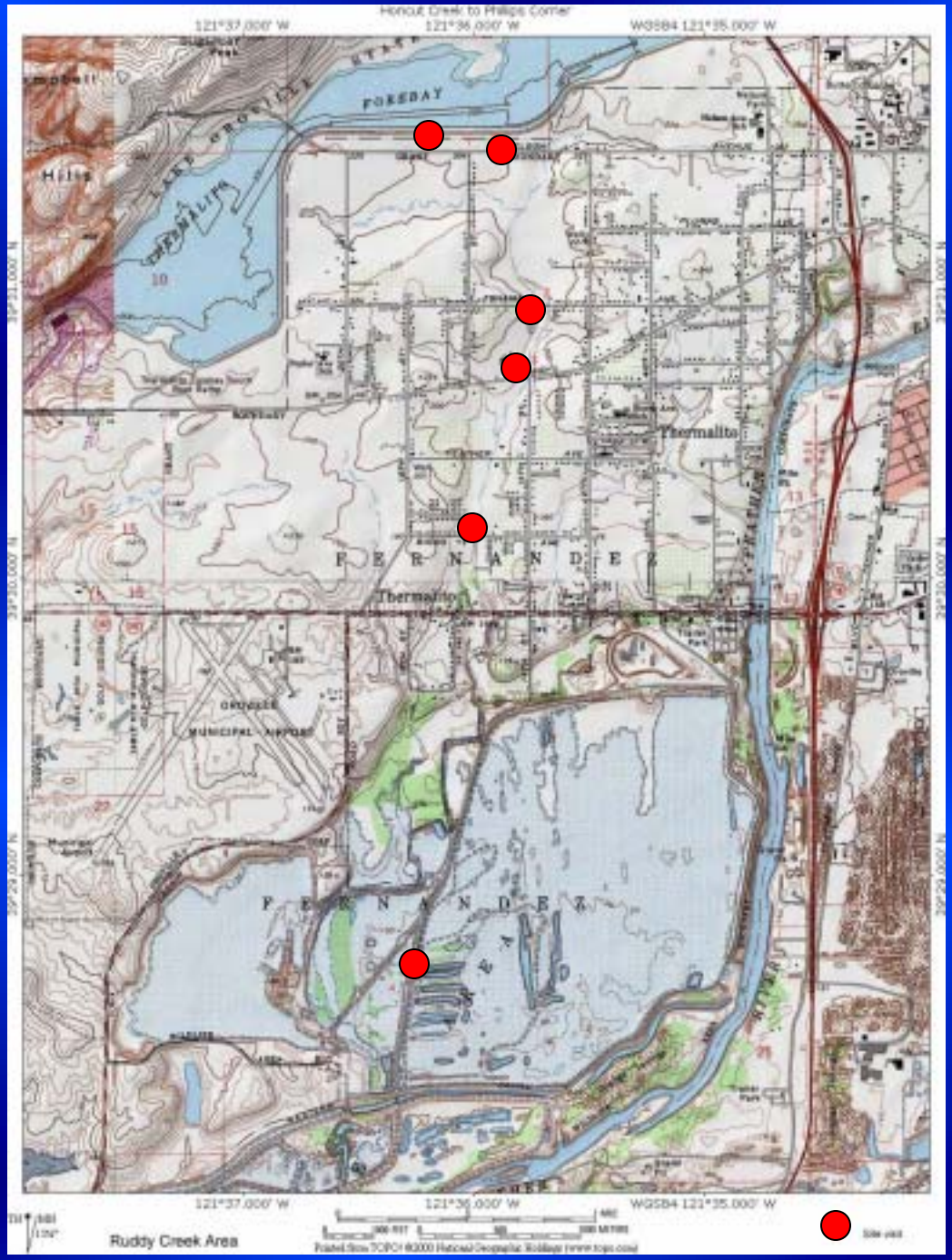
- Who Controls the Water?
- Agricultural Water Rights
- Providing Adequate Flows Would Require Purchasing Water Rights or Diverting Project Waters to the Tributaries

Resource Action EWG-98

Proposed Creation or Enhancement of Salmonid Spawning and Rearing Habitat in the Tributaries of the Lower Feather River

Ruddy Creek Area

Ruddy Creek Area

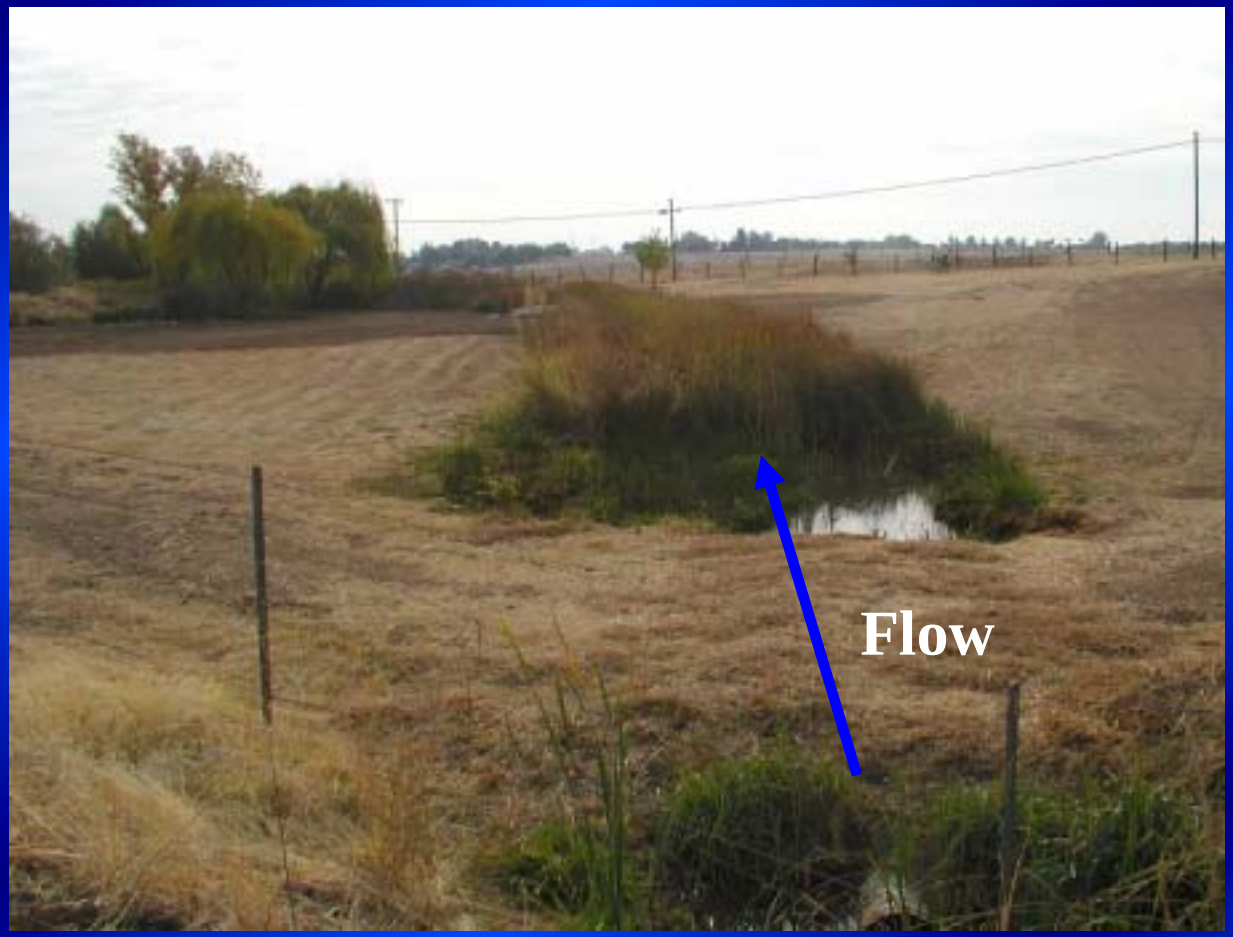


Water Source - Afterbay Toe Drains Upper Ruddy Creek

Upper Ruddy Creek – Toe Drains

Ruddy Creek - Below Toe Drains

- Low Gradient
- Intermittent Flow
- Soon to be Residential Neighborhood



Ruddy Creek at Tehama Bridge

- Facing North (Upstream)
- Low Gradient
- Intermittent Flow
- Limited Habitat Structure

Ruddy Creek at Tehama Bridge

- Facing South (Downstream)
- Low Gradient
- Intermittent Flow
- Limited Riparian Cover
- Private Land - Poor Substrate

Ruddy Creek - at Grand Avenue

- Low Gradient
- Intermittent Flow
- Channel Occupied by Riparian and Wetland Vegetation

Ruddy Creek at Biggs Avenue

- Facing North (Upstream)
- Low Gradient
- Intermittent Flow

Ruddy Creek at Biggs Avenue

- Facing South (Downstream)
- No Flow Due to Obstructions or Losses to Groundwater

Ruddy Creek Terminus in the OWA

- Gradient Steepens at OWA
- Riparian Conditions Improve
- Connects to the Feather River at High Flows

Ruddy Creek Terminus in the OWA

Video Clip

Ruddy Creek - Upper Watershed Potential Habitat for Salmonid Spawning & Rearing

Concerns

- Low Gradient, Intermittent Flow, Residential Development, Poor Substrate, Poor Salmonid Habitat, How to Get Salmon to Source

Options

- Restore the Stream for Other Purposes (i.e. Aesthetics and Flood Management)

Ruddy Creek - OWA
Potential Habitat for Salmonid Spawning & Rearing

Concerns

- How Do We Get Water To Here?
- How do We Connect to the Feather River?
- Will There Be Benefits for Anadromous Salmonids?

Options

- Further Analysis Required